CLAIMS

1. Nucleotide sequence, more particularly DNA and cloned DNA fragments which may be obtained from RNA, from cDNA or from primers which may be used for gene amplification, derived from the RNA or the DNA of the HIV-1 group O retrovirus, said nucleotide sequence being characterized in that it comprises the sequence corresponding to Seq ID No. 5, as well as any portion of this sequence or variant of this portion which is capable of hybridizing with the corresponding DNA or RNA of the HIV-1 group O virus.

2. Nucleotide sequence according to claim 1, characterized in that it is DNA or DNA fragments obtained from RNA, from cDNA or from primers for gene amplification, derived from the RNA or the DNA of the $HIV\text{-}1_{(VAU)}$ retrovirus, the sequence comprising the sequence corresponding to Seq ID No. 5 as well as any portion of this sequence or variant of this portion which is capable of hybridizing with the corresponding DNA or RNA of the $HIV\text{-}1_{(VAU)}$ virus.

3. Nucleotide sequence according to claim 1 or claim 2, characterized in that said sequence is chosen from the group of sequences corresponding to Seq ID No. 1, Seq ID No. 2, Seq ID No. 3 and Seq ID No. 4.

4. Nucleotide sequence, characterized in that it comprises the sequence of nucleotides corresponding to SEQ ID No. 7 and in that it codes for the integrase of an HIV-1 group O retrovirus, in particular of an $HIV\text{-}1_{(VAU)}$ retrovirus, or nucleotide sequence which hybridizes with the sequence containing the sequence SEQ ID No. 7.

5. Oligonucleotide comprising at least 9 nucleotides, as obtained from a nucleotide sequence according to any one of claims 1 to 4, which is capable of being

used as a primer for the gene amplification of an HIV-1 group O retrovirus.

6. Nucleotide sequence which may be used as a probe, characterized in that it hybridizes under highly stringent hybridization conditions with the DNA produced by gene amplification by means of primers according to claim 5.

7. Composition for the detection of the presence or absence of an HIV-1 group O retrovirus, in particular the HIV-$1_{(VAU)}$ retrovirus, in samples of serum or of other biological liquids or tissue obtained from patients suspected of being carriers of an HIV-1 group O retrovirus, said composition being characterized in that it comprises at least one probe obtained from a nucleotide sequence obtained from the genome of the HIV-$1_{(VAU)}$ virus, particularly an HIV-$1_{(VAU)}$ DNA fragment containing the *env* region or a part of the *env* region of the HIV-$1_{(VAU)}$ virus, of a variant of HIV-$1_{(VAU)}$ as defined in any one of claims 1 to 5.

8. Composition according to claim 7, characterized in that said composition also comprises a probe obtained from a nucleotide sequence obtained from HIV-1 not belonging to the O group, and/or from HIV-2.

9. Composition for the detection of the presence or absence of an HIV-1 group O retrovirus, in particular the HIV-$1_{(VAU)}$ retrovirus, in a biological sample, said composition being characterized in that it comprises at least two nucleotide sequences according to any one of claims 1 to 5, obtained from the genome of the HIV-$1_{(VAU)}$ virus, which sequences can be used as primers for amplification, in particular by PCR, of the DNA and/or RNA of HIV-1 group O retrovirus and in particular of HIV-$1_{(VAU)}$.

10. Nucleotide sequence, characterized in that it is an RNA sequence corresponding to a DNA sequence according to any one of claims 1 to 7.

11. Envelope protein of the HIV-$1_{(VAU)}$ retrovirus, characterized in that it may be obtained by expression, in a host cell, of a nucleotide sequence according to claim 1, and in that said protein comprises the amino acid sequence between residues 1 and 526 of Seq ID No. 6, as well as any peptide, polypeptide, glycoprotein or variant derived from said sequence having an epitope which is capable of being recognized by antibodies induced by the HIV-$1_{(VAU)}$ virus.

12. Envelope protein of the HIV-$1_{(VAU)}$ retrovirus, characterized in that it may be obtained by expression, in a host cell, of a nucleotide sequence according to claim 1, and in that said protein comprises the amino acid sequence between residues 527 to 877 of Seq ID No. 7, as well as any peptide, polypeptide, glycoprotein or variant derived from said sequence having an epitope which is capable of being recognized by antibodies induced by the HIV-$1_{(VAU)}$ virus.

13. Peptide or polypeptide according to claim 11 or 12, characterized in that it comprises the sequence CKNRLIC or in particular the sequence RLLALETFIQNWWLLNLWGCKNRLIC or a variant of that sequence such as the sequence RLWALETLIQNQQRLNLWGCKGKLIC, the sequence RLLALETLLQNQQLLSLWGCKGKLVC or the sequence RARLLALETFIQNQQLLNLWGCKNRLICYTSVKWNKT.

14. Synthetic peptide, characterized in that it is a protein fragment according to either of claims 11 and 12, in that it is obtained from the sequence SEQ ID No. 6 or from the sequence SEQ ID No. 7 and in that it is recognized by antibodies induced against an HIV-$1_{(VAU)}$ retrovirus or variant of this fragment capable of being recognized by antibodies induced by an HIV-$1_{(VAU)}$ retrovirus.

15. Composition for the in vitro detection of the presence, in a human biological sample, of anti-HIV-$1_{(VAU)}$ antibodies, said composition comprising at least one antigen comprising a protein, a glycoprotein, a polypeptide or a peptide of the envelope protein of an HIV-$1_{(VAU)}$ retrovirus as defined in any one of claims 11 to 14.

16. Composition according to claim 15, characterized in that it also comprises an antigen such as a protein, a glycoprotein, a polypeptide or a peptide of an HIV-1 virus not belonging to the O group and/or of an HIV-2 virus or a peptide derived from an HIV-1 virus not belonging to the O group and/or from an HIV-2 virus having an epitope which may be recognized by the antibodies induced by the HIV-1 virus not belonging to the O group and/or the HIV-2 virus.

17. Composition according to claim 16, characterized in that the proteins and/or glycoproteins of HIV-1 not belonging to the O group and/or of HIV-2 are gag or pol proteins or peptides thereof.

18. Composition according to claim 16, characterized in that the proteins and/or glycoproteins of HIV-1 not belonging to the O group and/or of HIV-2 are envelope glycoproteins.

19. Composition according to any one of claims 15 to 18, characterized in that said composition comprises a peptide sequence corresponding to the entire region 590-620 of the gp41 protein of HIV-$1_{(VAU)}$ or a part of this region which is specific for HIV-$1_{(VAU)}$.

20. Composition according to claim 19, characterized in that said peptide sequence is the sequence -TFIQN-, CKNRLIC or WGCKNR.

21. Antibody which may recognize an envelope protein, a peptide or a polypeptide derived from said envelope protein according to claim 11.

22. Process for the in vitro diagnosis of an infection caused by the HIV-$1_{(VAU)}$ virus, said process comprising:

- the placing in contact of a serum or of another biological medium, obtained from a patient forming the subject of the diagnosis, with at least one of the envelope proteins or glycoproteins of the HIV-$1_{(VAU)}$ virus or of a peptide or polypeptide obtained from one of these proteins or glycoproteins according to any one of claims 11 to 14 or a composition according to any one of claims 15 to 20, and

- the detection of an immunological reaction.

23. Reagent required for the Western blot (immunoblot) or ELISA reaction, containing an envelope protein or glycoprotein of the HIV-$1_{(VAU)}$ virus or of a peptide or polypeptide obtained from one of these proteins or glycoproteins according to any one of claims 11 to 14 or a composition according to any one of claims 15 to 20.

24. Use of a nucleotide sequence according to claim 1 or 2 in order to induce in vivo the synthesis of antibodies directed against the antigen coded for by said sequence.

25. Immunogenic composition according to any one of claims 15 to 20, which is capable of inducing antibodies in animals.

26. Diagnostic kit for the <u>in vitro</u> detection, on a biological sample, of an infection with an HIV-1 group O retrovirus, for example of an HIV-$1_{(VAU)}$ retrovirus, characterized in that it comprises:

- primers according to claim 5 for the gene amplification of an HIV-1 group O retrovirus,

- reagents required for the gene amplification reaction.

27. Kit for the <u>in vitro</u> detection, on a biological sample, of an HIV-1 group O retrovirus, characterized in that it comprises as optionally labeled probe, at least one nucleotide sequence according to one of claims 1, 2, 3, 4, 5, 6 or 10 or a composition according to one of claims 7, 8 or 9, and optionally another nucleotide probe according to any one of claims 1 to 6 or composition according to any one of claims 7, 8 or 9, which is optionally immobilized on a solid support.

28. Kit according to claim 27, characterized in that it also comprises the reagents required for carrying out a hybridization.

29. Bacterial strain deposited at the CNCM on 20 October 1994 under the access number I-1486.

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